

Upper Osceola Dam Failure: What Can Happen When Everyone Pulls Together



During the early morning hours of September 2nd, 2002, heavy rains sent a flood of water down Osceola Creek. The Upper Osceola Dam (a privately owned large dam) failed, adding more water and sediment to torrent. Residents immediately downstream of the dam had to be evacuated during the night, while the Lower Osceola Dam was overtopped for several hours. The large amount of sediment released from the failed upper dam covered the floodplain downstream

and ended up in the St. Croix River, endangering critical mussel habitat. The flood waters caused a significant amount of damage downstream of the Lower Osceola Dam outlet, sending additional debris and sediment downstream and washing away a downstream Village park.

After assuring the safety of residents, the Village of Osceola reacted swiftly and notified the appropriate state agencies and elected officials. State Representative Mark Pettis, the Wisconsin Department of Transportation (DOT) and the Wisconsin Department of Natural Resources (DNR) quickly responded. During the day of Sept 2nd, the Upper Osceola Dam, the Lower Osceola Dam and the Highway 35 Bridge were assessed for any immediate and apparent safety concerns.

In the days and weeks that followed, a concentrated and coordinated effort was undertaken to determine how to best address damage from the dam failure. The Village acted as the central coordinator for all state and federal programs, and applied for any available funding to supplement their own considerable expenditures. The attitude taken by all participants was to concentrate on fixing problems, not on assigning blame or liability. Initial concerns included providing emergency relief for the affected residents, examining in detail the affected dams and bridge, cleaning up the sediment washed downstream and stabilizing exposed sediment upstream of the failed dam. The Village was included in the 2002 Federal Disaster Declaration, which paved the way for federal and state disaster assistance. Further, Representative Pettis ensured prioritization of available state resources.



The Village contracted with a private consultant to thoroughly inspect the Lower Osceola Dam for damages, and map the extent of the dam failure. DOT inspectors carefully evaluated the HWY 35 Bridge. Wisconsin Emergency Management (WEM) arranged funding through the Federal Emergency Management Agency (FEMA) to temporarily house evacuated residents, coordinated FEMA funding with the Village to buy out the high-risk trailer park in the floodway, and secured funding for removal of sediments below the Upper Osceola Dam. FEMA also funded a hydrologic evaluation of the watershed, demonstrating the need to significantly increase the hydraulic capacity of the Lower Osceola Dam.



The DNR Remediation and Redevelopment program initiated, funded and managed one of the first remediation projects. Bank stabilization was undertaken upstream of the Upper Dam to stop additional erosion of exposed sediments, while the Village completed erosion control upstream of the Lower Dam. Erosion control was done in coordination with the U.S. Fish and Wildlife Service, the Polk County Land and Water Resources Department and volunteers.

The Department issued a repair/abandon order for the Upper Dam. When it became apparent that the dam owner was having difficulties meeting the requirements of the order, and the possibility existed for restoring a major section of trout habitat, DNR Property Management arranged state acquisition of the land parcel and the dam. An agreement was reached for the Department to abandon and remove the dam, and then transfer the land to the Village while maintaining a conservation easement along the trout stream.

DNR Fisheries and Regional Field Operations staff initiated further upstream trout habitat restoration. An additional upstream un-authorized structure was removed, in addition to a small amount of channel dredging. This is a continuing effort, with further habitat enhancements planned and funded through trout stamp dollars.

Water Regulation and Zoning staff ensured that the Department fulfilled code requirements for a large dam abandonment, including preparing an environmental assessment, addressing citizen concerns, and issuing approvals for removal of the structures involved and habitat restoration.

Property Management Engineers designed and managed removal of the Upper Dam. The Village has decided to upgrade the



Lower Dam's hydraulic capacity in conjunction with a major project to rehabilitate HWY 35 and the Osceola Bridge. In a couple years, the trout habitat and stream restoration work will be completed, and the public will have the opportunity to access Osceola Creek to fish or enjoy a nature hike right in the heart of the small community of Osceola.

Key Partners and their Roles:

Village of Osceola Administrator and Village Board members

- Considerable expenditures
- Grants - application and coordination of State and Federal funds
- Making the tough decisions

Wisconsin Department of Transportation

- Rebuilding Highway 35
- Including Lower Osceola Dam reconstruction in the HWY 35 project

Elected State Representative Mark Pettis

- Emergency response
- Prioritizing State resources to ensure success
- Adding Osceola to the 2002 Federal Disaster Declaration

Wisconsin Department of Natural Resources (Northern Region and Central Office)

- Remediation and Redevelopment program
 - funding and management for soil stabilization, protection of St Croix River
- Fisheries and Regional Field Operations
 - funding and management for stream and habitat restoration
- Property Management
 - acquisition of Upper Osceola Dam, facilitation of it's abandonment
- Dam Safety/Floodplain and Water Regulation and Zoning
 - technical advice during and after emergency response, coordinating permitting and review for dam projects and floodplain mitigation issues
- Waste Management
 - Disposal of sediments and debris
- Stormwater
 - guidelines for stormwater management, grant for detention facility
- Environmental Analysis and Review
 - Coordinating with Hwy 35 project, Environmental Assessment review and Record of Decision

Wisconsin Emergency Management

- Funding for removal of structure in trailer Park, temporary housing, Hazard Mitigation Grant

Federal Emergency Management Agency

- Provided funding for hydrologic evaluation, lower Osceola dam undersized
- Provided funding for sediment removal in Park

U.S. Fish and Wildlife Service

- Funding and help with stream restoration.

Polk County Land and Water Resources Department

- Streambank restoration and plantings,
- Technical assistance through Osceola Creek Priority Watershed project

National Park Service – St. Croix National Scenic Riverway

- Technical assistance and expertise in location of, and protection strategies for, endangered mussels

Volunteers from Trout Unlimited, the Village of Osceola, and Osceola High School

- Hard work installing fiber logs and other stream stabilization materials